

# Receiving Report

Date: 16-10-12

Batch No: 135865

Supplier: magro

Dart P/O: 33856

Packing Slip: Yes ☒ No ☐  
 Invoice: Yes ☒ No ☐  
 Receipt: Cash ☐ Cr ☒  
 New Supplier Yes ☐ No ☒

Release Note Attached: Yes ☒ No ☐ N/A ☐  
 Waybill Attached: Yes ☒ No ☐  
 Shipment Complete: Yes ☒ No ☐ N/A ☒  
 QC18 Inspection ☐ N/A ☒  
 Work Order ☐ N/A ☒

## Discrepancies

Part Number	Description	Quantity Ordered	Quantity Rec'd	Quantity Short	Quantity Inspected	Quantity Rejected	Comment / NCR Number

Initials of Receiver

QC12

SP

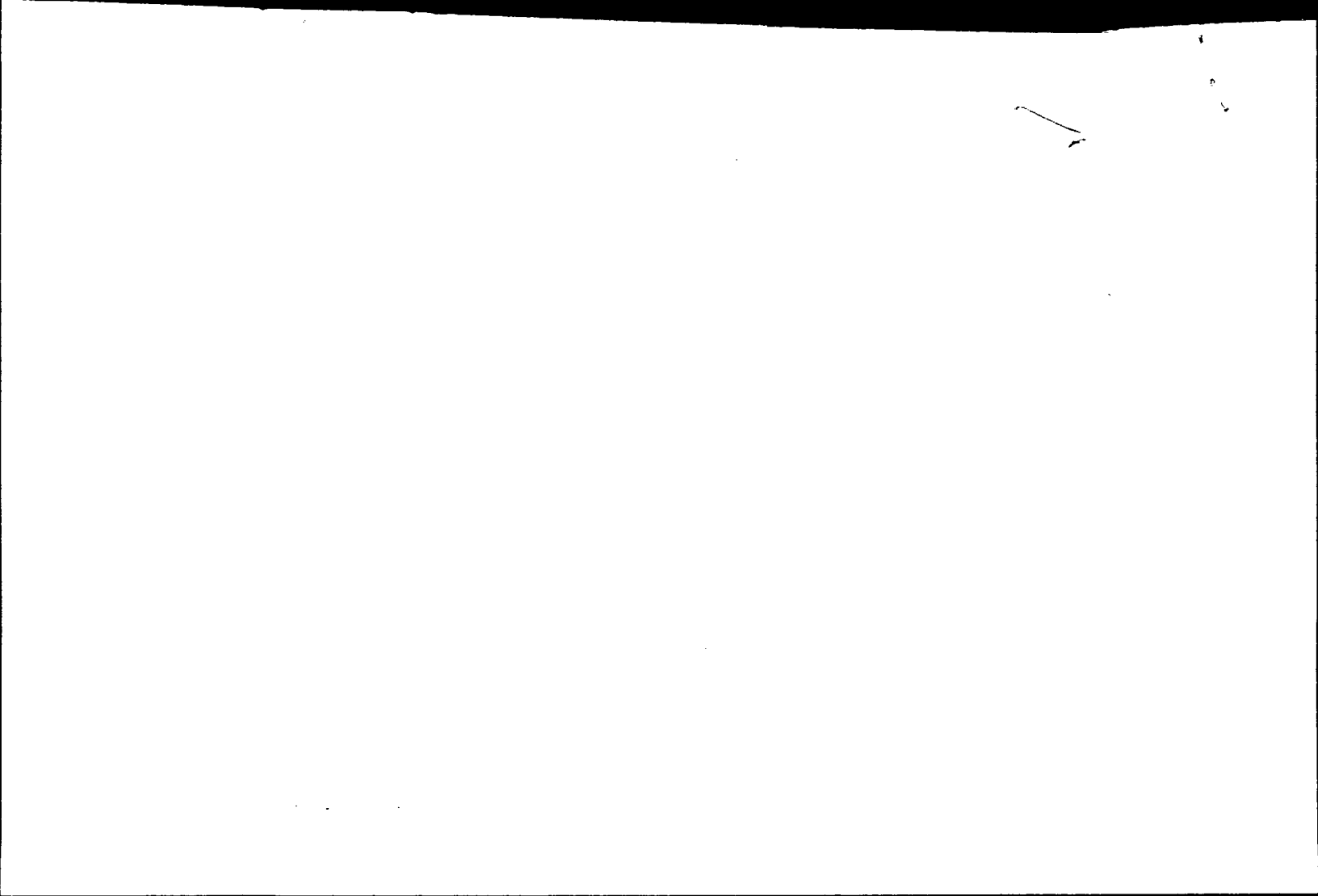
Production/Admin:

Date \_\_\_\_\_

Received/Costing \_\_\_\_\_

Initial \_\_\_\_\_

Location \_\_\_\_\_





Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632-1053

# PURCHASE ORDER

Purchase Order ID PO33856

Purchase Order Date 10/5/2016

PO Print Date 10/5/2016

Page Number 1 of 3

Order From :

VU-EC001

Ship To : DART AEROSPACE LTD

OCT 05 2016

MONROE AEROSPACE  
399 EAST DRIVE  
MELBOURNE, FLORIDA 32904  
USA

1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

E-MAILED

Contact Name

Vendor Phone

1-321-727-0047

Ship To Contact

Ship To Phone

Ship Via:

FedEx Economy collect

Ship Acct:

Buyer

Customer POID

Customer Tax #

Terms

Currency

FOB

Chantal Lavoie

10127-2607

Net 30

USD

FCA - (Free Carrier)

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	AN3-3A ✓ 0021003	Bolt	10/7/2016 Yes 10/7/2016	FN	50.00 ✓ Each	\$0.07	\$3.50
Line Total:							\$3.50
2	CCR264SS-3-06 ✓ 321	Rivet	10/7/2016 Yes 10/7/2016	FN	100.00 ✓ Each	\$0.16	\$16.00 22-00
Line Total:							\$16.00
3	CR3213-5-3 ✓ 001003	Cherry Rivet	10/7/2016 Yes 10/7/2016	FN	100.00 ✓ Each	\$0.34	\$34.00 40-00

Note:

10/5/2016

5016-10-12





Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

# PURCHASE ORDER

Purchase Order ID PO33856

Purchase Order Date 10/5/2016

PO Print Date 10/5/2016

Page Number 2 of 3

Order From :

VU-EC001

Ship To : DART AEROSPACE LTD

MONROE AEROSPACE  
399 EAST DRIVE  
MELBOURNE, FLORIDA 32904  
USA

1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

Contact Name

Vendor Phone

1-321-727-0047

Ship To Contact

Ship To Phone

Ship Via:

FedEx Economy collect

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax #

10127-2607

Terms

Net 30

Currency

USD

FOB

FCA - (Free Carrier)

Line Total: \$34.00

4 MS21919-WDG9 ✓

Clamp

10/7/2016

Yes

10/7/2016

100.00 ✓

Each

\$0.48

✓ \$48.00

Line Total: \$48.00

5 MS27039-08-19 ✓

Screw

10/7/2016

Yes

10/7/2016

100.00 ✓

Each

\$0.14

✓ \$14.00

Line Total: \$14.00

6 MS27039-1-16 ✓

Screw

10/7/2016 FN

Yes

10/7/2016

100.00 ✓

Each

\$0.09

\$9.00

Line Total: \$9.00

Note:

10/5/2016

277.  
over 1000  
8/16-10-12





Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

# PURCHASE ORDER

Purchase Order ID **PO33856**

Purchase Order Date 10/5/2016

PO Print Date 10/5/2016

Page Number 3 of 3

**Order From :**

VU-EC001

MONROE AEROSPACE  
399 EAST DRIVE  
MELBOURNE, FLORIDA 32904  
USA

**Ship To :** DART AEROSPACE LTD

1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

**Contact Name**

**Vendor Phone** 1-321-727-0047

**Ship To Contact**

**Ship To Phone**

**Ship Via:** FedEx Economy collect

**Ship Acct:**

**Buyer**

Chantal Lavoie

**Customer POID**

**Customer Tax #**

10127-2607

**Terms**

Net 30

**Currency**

USD

**FOB**

FCA - (Free Carrier)

7 71401-45

PROCUREMENT  
QUALITY CLAUSES

10/7/2016

1.00

\$0.00

\$0.00

No

10/7/2016

**Procurement Quality Clauses**

A005 RIGHT OF ENTRY

A012 CHEMICAL AND PHYSICAL TEST REPORTS

A016 PERSONNEL QUALIFICATION

A026 CERTIFICATION OF MATERIAL CONFORMANCE

A032 PUBLIC LAW 101-592 FASTENER QUALITY ACT

A033 STATEMENT OF CONFORMITY/TEST RECORDS

FOR NAS, AN and MS FASTENERS

A040 NOTIFICATION OF QUALITY ESCAPE

A041 QUALITY MANAGEMENT SYSTEM

A043 RETENTION OF QUALITY DOCUMENT

SP16-10-12

**Line Total:**

\$0.00

**PO Total:**

\$124.50

h

CL

**Note:** Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit [www.dartaerospace.com](http://www.dartaerospace.com) for further explanation.

**Change Nbr:** 1

**Change Date:** 10/5/2016





# ECAS, LLC

## CUSTOMS INVOICE

No: H977913

### Package Details:

### Deliver To:

Number of Pieces: Total Weight: 5.3	DART AEROSPACE LTD. ATTN: RECEIVING 1270 ABERDEEN STREET HAWKESBURY, ON K6A 1K7 Canada
--	--

Carrier	A/W Bill	Flight Number/Date	House A/W Bill
113- FX INT ECONOMY 151793240	665770302000		

Qty	Part No.	Description	Serial Number	Origin	Value	Ext Value	Cust. PO#
50	AN3-3A ✓	BOLT UNDRILLED			USE \$3.5000	\$3.5000	PO33856
✓100	CCR264SS3-06 ✓	CHERRY RIVET			USE \$22.0000	\$22.0000	PO33856
✓100	CR3213-5-03 ✓	CHERRY RIVET			USE \$40.0000	\$40.0000	PO33856
✓100	MS21919WDG9 ✓	CLAMP			USE \$48.0000	\$48.0000	PO33856
✓100	MS27039-0819 ✓	STRUCTURAL SCREW			USE \$14.0000	\$14.0000	PO33856
✓100	MS27039-1-16 ✓	STRUCTURAL SCREW			USE \$12.0000	\$12.0000	PO33856

Total: \$139.5000

Home Total: \$139.5000

The goods are supplied to you under the terms of your end-use.  
I do hereby declare to the best of my knowledge the invoice to be true and correct.

Signed:

*SP 16-10-12*

For and on behalf of ECAS, LLC

Inspectors Stamp



**PACKING SLIP**

INVOICE #: 576900  
DATE PRINTED: 10/10/2016  
TIME: 3:11:51 PM  
# OF ITEMS: 6  
PAGE: 1

**TO:** DART AEROSPACE LTD.  
ACCTS. PAYABLE  
1270 ABERDEEN STREET  
HAWKESBURY, ON K6A 1K7  
CANADA

ATTN: CHANTAL LAVOIE  
Ph: 613.632.3336 Fax: 613.632.5246

**SHIP TO:** DART AEROSPACE LTD.  
ATTN: RECEIVING  
1270 ABERDEEN STREET  
HAWKESBURY, ON K6A 1K7  
Canada

INVOICE DATE: 10/10/2016

TERMS: NET 30

WEIGHT: 5.3

SHIP VIA: 113- FX INT ECONOMY

ORDER DATE: 10/5/2016

CUST PO: PO33856

# OF BOXES:

SHIP DATE: 10/10/2016

FOB: MELBOURNE, FL

SHIPMENT #: 0

SALES ORDER #: 514071

CUSTOMER #: 16754

AWB: 665770302000

YOUR MONROE ACCOUNT REP: Luis Sepulveda

ITEM	PART NUMBER/DESCRIPTION	SHIPPED	B/O	CD	UNIT PRICE	UOM
1	AN3-3A BOLT UNDRILLED ✓ MFR: AFC LOT: 25270 Control #: 145520-8	✓ 50.00	0.00	NE		
2	CCR264SS3-06 CHERRY RIVET ✓ MFR: CHERRY LOT: 87743839 Control #: 146070-1	✓ 100.00	0.00	NE		
3	CR3213-5-03 CHERRY RIVET ✓ MFR: CHERRY LOT: 87952978 Control #: 141423-1	100.00 ✓	0.00	NE		
4	MS21919WDG9 CLAMP ✓ MFR: UMPCO LOT: UMP109874 Control #: 146841-5	100.00 ✓	0.00	NE		
5	MS27039-0819 STRUCTURAL SCREW ✓ MFR: CRESCENT LOT: 80838 Control #: 128337-1	100.00 ✓	0.00	NE		

SPECIAL INSTRUCTIONS:

*We Thank You For Your Continued Business!*

**MONROE TAX ID: 47-3784072**

*SP/16-10-12*

**ECAS, LLC dba MONROE AEROSPACE**

**399 EAST DRIVE MELBOURNE, FL 32904 PH: 800.330.3975 FAX: 321.727.7331**



**PACKING SLIP**

INVOICE #: 576900  
DATE PRINTED: 10/10/2016  
TIME: 3:11:51 PM  
# OF ITEMS: 6  
PAGE: 2

**TO:** DART AEROSPACE LTD.  
ACCTS. PAYABLE  
1270 ABERDEEN STREET  
HAWKESBURY, ON K6A 1K7  
CANADA

ATTN: CHANTAL LAVOIE  
Ph: 613.632.3336 Fax: 613.632.5246

**SHIP TO:** DART AEROSPACE LTD.  
ATTN: RECEIVING  
1270 ABERDEEN STREET  
HAWKESBURY, ON K6A 1K7  
Canada

INVOICE DATE: 10/10/2016

TERMS: NET 30

WEIGHT: 5.3

SHIP VIA: 113- FX INT ECONOMY

ORDER DATE: 10/5/2016

CUST PO: PO33856

# OF BOXES:

SHIP DATE: 10/10/2016

FOB: MELBOURNE, FL

SHIPMENT #: 0

SALES ORDER #: 514071

CUSTOMER #: 16754

AWB: 665770302000

YOUR MONROE ACCOUNT REP: Luis Sepulveda

ITEM	PART NUMBER/DESCRIPTION	SHIPPED	B/O	CD	UNIT PRICE	UOM
6	MS27039-1-16 STRUCTURAL SCREW MFR: LFC Control #: 119878-1	100.00	0.00	NE		
LOT: S51583						

8916-10-12

SPECIAL INSTRUCTIONS:

*We Thank You For Your Continued Business!*

**MONROE TAX ID: 47-3784072**





MONROE TAX ID: 47-3784072

# Invoice

INVOICE #: 576900  
DATE PRINTED: 10/10/2016  
TIME: 3:11:17 PM  
# OF ITEMS: 6  
PAGE: 1

TO: DART AEROSPACE LTD.  
ACCTS. PAYABLE  
1270 ABERDEEN STREET  
HAWKESBURY, ON K6A 1K7  
CANADA

SHIP TO: DART AEROSPACE LTD.  
ATTN: RECEIVING  
1270 ABERDEEN STREET  
HAWKESBURY, ON K6A 1K7  
Canada

ATTN: CHANTAL LAVOIE  
Ph: 613.632.3336 Fax: 613.632.5246

INVOICE DATE: 10/10/2016

TERMS: NET 30

WEIGHT: 5.3

SHIP VIA: 113- FX INT ECONOMY

ORDER DATE: 10/5/2016

CUST PO: PO33856

# OF BOXES:

SHIP DATE: 10/10/2016

FOB: MELBOURNE, FL

SHIPMENT #: 0

SALES ORDER #: 514071

AWB: 665770302000

YOUR MONROE ACCOUNT REP: Luis Sepulveda

CUSTOMER #: 16754

ITEM	PART NUMBER/DESCRIPTION	SHIPPED	B/O	CD	UNIT PRICE	UOM	TOTAL AMT
✓ 1	AN3-3A BOLT UNDRILLED	50.00	0.00	NE	0.0700	EA	✓ \$3.5000
	MFR: AFC LOT: 25270						
✓ 2	CCR264SS3-06 CHERRY RIVET	100.00	0.00	NE	0.2200	EA	✓ \$22.0000
	MFR: CHERRY LOT: 87743839						
✓ 3	CR3213-5-03 CHERRY RIVET	100.00	0.00	NE	0.4000	EA	✓ \$40.0000
	MFR: CHERRY LOT: 87952978						
✓ 4	MS21919WDG9 CLAMP	100.00	0.00	NE	0.4800	EA	✓ \$48.0000
	MFR: UMPCO LOT: UMP109874						
✓ 5	MS27039-0819 STRUCTURAL SCREW	100.00	0.00	NE	0.1400	EA	✓ \$14.0000
	MFR: CRESCENT LOT: 80838						
✓ 6	MS27039-1-16 STRUCTURAL SCREW	100.00	0.00	NE	0.1200	EA	✓ \$12.0000
	MFR: LFC LOT: S51583						

\*\*\* Order Complete \*\*\*

SPECIAL INSTRUCTIONS:

We Thank You For Your Continued Business!

SUB TOTAL: \$139.5000  
TAX TOTAL: \$0.0000  
MISC CHARGE: \$0.0000  
FREIGHT: \$0.0000  
TOTAL: \$139.50  
USD

ECAS, LLC dba MONROE AEROSPACE  
399 EAST DRIVE MELBOURNE, FL 32904 PH: 800.330.3975 FAX: 321.727.7331

✓

✓  
✓  
✓





## CERTIFICATE OF CONFORMITY

NO: 576900

**BILL TO:**

**DART AEROSPACE LTD.  
ACCTS. PAYABLE  
1270 ABERDEEN STREET  
HAWKESBURY, ON K6A 1K7**

**SHIP TO:**

**DART AEROSPACE LTD.  
ATTN: RECEIVING  
1270 ABERDEEN STREET  
HAWKESBURY, ON K6A 1K7**

CUSTOMER PO	SHIP DATE	AIRWAY BILL/TRACKING #
PO33856	10/10/2016	665770302000

PART NO:	Description	CND	QTY	S/L	
AN3-3A	BOLT UNDRILLED	NE	50	57	LOT: 25270 MFR: AFC
CCR264SS3-06	CHERRY RIVET	NE	100	27	LOT: 87743839 MFR: CHERRY
CR3213-5-03	CHERRY RIVET	NE	100	72	LOT: 87952978 MFR: CHERRY
MS21919WDG9	CLAMP	NE	100	38	LOT: UMP109874 MFR: UMPCO
MS27039-0819	STRUCTURAL SCREW	NE	100	13	LOT: 80838 MFR: CRESCENT
MS27039-1-16	STRUCTURAL SCREW	NE	100	22	LOT: S51583 MFR: LFC

**CONDITIONS:    NE - New    OH-OVERHAULED    RP-REPAIRED    SV-SERVICEABLE**

We hereby certify that the items that are a part of this Purchase Order have been visually & dimensionally found to conform to all applicable standards, drawings & specifications. The liability of ECAS, LLC is limited to replacement of any item which is rejected because of a defect in material or workmanship if notified within 30 days & liability shall not exceed the invoice value. Such replacement shall constitute satisfaction of all liability.

SIGNED: \_\_\_\_\_

*For and on behalf of ECAS, LLC dba MONROE AEROSPACE*

**Insp.  
#2**

INSPECTOR'S STAMP

**ECAS, LLC dba MONROE AEROSPACE  
399 EAST DRIVE MELBOURNE, FL 32904 PH: 800.330.3975**



**2655 Harrison Ave. SW  
Canton, Ohio 44706-3047  
Phone: 330-430-6190  
Fax: 330-430-6199**

## CERTIFICATE OF CONFORMANCE

# ECAS

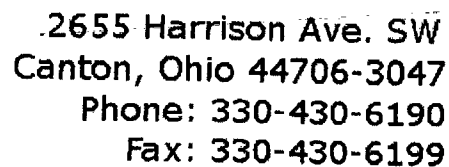
I Hereby Certify that on 02/2/16 Airfasco Industries provided the supplies called for by Contract/ PO Number **FL75927** in accordance with all applicable requirements for shipment. I further state that the process certifications are in conformance with the contract requirements, including specifications and/or drawings, physical item identification (part number) and the quantity shown on this or attached acceptance document. The part numbers certified below have been manufactured in the United States. DFAR 252.225-7009 compliant in fastener base raw material melt source only, with heat number and country, does not include the post cadmium metal plating.

**Quality Assurance Representative**

  
WM. DENT

[illegible]





## CERTIFICATE OF CONFORMANCE

# ECAS

I Hereby Certify that on 02/2/16 Airfasco Industries provided the supplies called for by Contract/ PO Number **FL75927** in accordance with all applicable requirements for shipment. I further state that the process certifications are in conformance with the contract requirements, including specifications and/or drawings, physical item identification (part number) and the quantity shown on this or attached acceptance document. The part numbers certified below have been manufactured in the United States. DFAR 252.225-7009 compliant in fastener base raw material melt source only, with heat number and country, does not include the post cadmium metal plating.

**Quality Assurance Representative**

  
WM. DENT

[illegible]





2655 Harrison Ave. SW  
Canton, Ohio 44706-3047  
Phone: 330-430-6190  
Fax: 330-430-6199

### PHYSICAL AND CHEMICAL CERTIFICATION

DATE MFG.: 05/20/15

PART NO.: AN3-3A per NASM3-3A rev.3

AFC LOT NO.: 25270

QTY MFG.: 142,000

PROCUREMENT SPECIFICATION: Produced per NASM 6812

### HEAT TREAT

VENDOR: Brite Metal

CERTIFICATION NO.: 169347

PROCUREMENT SPECIFICATION: Heat Treat per AMS 2759

### PLATING

VENDOR: Cleveland Plating

CERTIFICATION NO.: 61872

PROCUREMENT SPECIFICATION: Cadmium Plate per QQ-P-416 C, Type II, Class 2

### MATERIAL

MILL: Solon Wire

COUNTRY OF MELT: USA

HEAT: 5170096

GRADE SPECIFICATION: Alloy Steel per AMS 6300 E, Type 4037, .218"

### 4037 MATERIAL CHEMISTRY

ELEMENT-ID.	-C-	-MN-	-P-	-S-	-SI-	-NI-	-CR-	-MO-	-CU-	-AL-	Other
LADLE	.390	.830	.006	.005	.200	.040	.009	.230	.060	.021	

### PHYSICAL PROPERTIES

PHYSICAL	TENSILE	YIELD	SHEAR	HARDNESS
REQUIRED	2,210 lbs.	1,690 lbs.	2,125 lbs.	HRC 26-32
ACTUAL	3,947 lbs.	3,020 lbs.	2,721 lbs.	HRC 29-30

We hereby certify that the above data is correct and that the fasteners have been manufactured and inspected in accordance with Airfasco Industries quality requirements.

QS-082  
REV 0  
2/15

Airfasco Industries  
Quality Assurance Representative:

T. West





SAFE AS ABOVE

Townsend Division of Textron Inc  
1224 East Warner Ave., Box 2157  
Santa Ana, California 92707  
714/540-6611 or 213/979-2121

# TOWNSEND TEXTRON

100-443887-100

DATE SHIPPED 2/11/64 SHIPPED VIA Ve Now  
ORDER COMPLETE ☐ ORDER NO. 160 C.O.D. ☐ COLLECT ☐ PREPAID ☐  
NO. OF PACKAGES 4 WEIGHT 160 PACKED BY 160

[illegible]

Subscribed and sworn to before me this 10 day of

15

Admiral Publ.

In and for the County of Orange  
State of California:





**CHERRY®**  
**AEROSPACE**  
 SPS Fosterer Division, a PCC Company

Cherry Aerospace  
 1224 East Warner Avenue  
 Post Office Box 2157  
 Santa Ana, CA 92707-0157  
 USA



# PACKING LIST

Order No: S0379668  
 Order Date: 10/17/13  
 Print Date: 06/09/14

Page: 2



Sold-To: 10016384





Ship-To: 10016384

S  
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PEERLESS AEROSPACE FAST  
 141 EXECUTIVE BLVD.  
 PO BOX 710  
 FARMINGDALE, NY 11735  
 USA

S  
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T  
O

PEERLESS AEROSPACE FAST  
 141 EXECUTIVE BLVD.  
 PO BOX 710  
 FARMINGDALE, NY 11735  
 USA

Ln	Item Number	Site T Location Lot/Serial	Qty Open Qty to Ship	UM	Promised Shipped
3	CR3213PR-5-03 MBBN3012L4003 NAS9301B-5-03 NAS9301BNS-5-03				
		EZL-A41 87952978			
		EZL-A52 87949724	29000.0	( )	
		EZL-A55 87949726	4800.0	( )	
		EZL-A79 87952977	34900.0 33100.0	( ) ( )	



**TEST REPORTS ENCLOSED**  
**DO NOT DESTROY**



These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law is prohibited

## CERTIFICATION

The material and/or parts we are furnishing in this shipment (as shown above) on the subject Purchase Order conform to the order and applicable specifications. Evidence that the material and/or parts meet the specifications and results of all tests for each lot affected will be in our files and will be available for your inspection at any reasonable time.

## ATTENTION: PURCHASING DEPARTMENT

Quality Assurance Representative

Signed

SIM NGUYEN



**CHERRY AEROSPACE**1224 East Warner Avenue  
Santa Ana, CA 92707-0157Accredited  
Chemical Processing  
Heat Treating  
ISO/IEC 17025  
Material Testing Lab**Final Inspection & Test Report**  
**CherryMax® Rivet****An ISO9001 and AS9100 registered company. OASIS #6111041606**

Part Numbers	Rev	Proc. Spec.	Rev	<b>Lot I.D. No.:</b> 87952978  <b>Lot Size:</b> 32,000  <b>MFG. Date:</b> June 03, 2014
CR3213PR-5-03	AB	PS-CMR-3000	R	
CR3213-5-03	AB	PS-CMR-3000	R	
** See 2nd Page for the Customer Parts				

**ASSEMBLY DATA**

TYPE	ID #	CERT #	MATERIAL	FINISH	LUBE
Rivet	87946046	A74620	QQ-A-430/5056	MIL-C-5541 CLEAR CL1A	None
Stem	87875165	A73879	AMS6322 / 8740ST	QQ-P-416/T2CL2/CAD PL	None
Collar	00000000	A74491	A-286 / AMS5731	Passivate per AMS2700	None

W.O. #: 5549408

Final Lube: None

**QUALITY CONFORMANCE/ACCEPTANCE RESULTS**

MIN REQ'D SAMPLE SIZE SPECS	INSTALLED SHEAR		TENSION		SPINDLE RETENTION			DISASSEMBLY
	840		445		200			10
	8	N/A	8	N/A	5	8	N/A	5
	C-N-M	B	C-N-M	B	C-N-M	M	B	C-N-M
RESULTS	1415		583		562	439		36
	1429		542		484	442		29
	1431		576		490	423		100
	1408		557		466	453		34
	1399		565		510	514		100
C=CR N=NAS	1453		592			453		
M=MIL B=BAC	1316		583			467		
LOAD VALUES IN POUND	1364		481			444		

<u>PCS.</u>	<u>ITEM</u>	<u>STATUS</u>	<u>PCS.</u>	<u>ITEM</u>	<u>STATUS</u>
20	EXAMINATION	PASS	20	INSTALLATION (Min and Max Grips)	PASS

**Comments:**

Blind Fastener

Tr. Rev: 1	Q Code
Rev. Date: 6/3/2014	V09
Inspector D Rice	

The parts contained in this shipment have been manufactured and inspected in accordance with TSO-C148. The conditions and tests required for TSO approval of this article are minimum performance standards. Aircraft fasteners approved under this TSO are not necessarily interchangeable with other aircraft fasteners approved under this TSO. Fasteners of similar dimensional properties may have widely varying performance and metallurgical properties. Substitution of parts may only be done if acceptable to or approved by the Administrator.

This test report shall not be reproduced except in full, without the written approval of the laboratory.  
The recording of false, fictitious, or fraudulent statement or entries on the certificate may be punished as a felony under Federal law.



**CHERRY AEROSPACE**

SPP Customer Division, a PCC Company

1224 East Warner Avenue  
Santa Ana, CA 92707-0157

Accredited

**Nadcap**Chemical Processing  
Heat Treating  
ISO/IEC 17025  
Material Testing Lab**Final Inspection & Test Report**  
**CherryMax® Rivet**

An ISO9001 and AS9100 registered company. OASIS #6111041606

Lot I.D. No.: **87952978**Rev: **1****Customer Parts List**

<u>Customer Part Number</u>	<u>Rev</u>	<u>Proc. Spec.</u>	<u>Rev</u>
NAS9301BNS-5-03	5	NAS1686	3
132269A503	F	MIL-R-7885	D2
132269A503	F	NAS1686	3
132269A503	F	PS-CMR-3000	R
ASNA0078A503	P	MIL-R-7885	D2
ASNA0078A503	P	NAS1686	3
ASNA0078A503	P	PS-CMR-3000	R
B0207005-5-03	E	MIL-R-7885	D2
B0207005-5-03	E	NAS1686	3
B0207005-5-03	E	PS-CMR-3000	R
CAN43078B5-3	8	MIL-R-7885	D2
CAN43078B5-3	8	NAS1686	3
CAN43078B5-3	8	PS-CMR-3000	R
M7885/2-5-03	D2	MIL-R-7885	D2
MBBN3012L4003	01/06	MBBN3015	12/03
NAS9301B-5-03	5	NAS1686	3

Parts delivered in accordance with the standard amendments as agreed by Cherry/EADS.





# BENEKE

## Product Certification And Testing Report

Customer:  
CHERRY AEROSPACE LLC  
ATTN: ACCTS. PAYABLE  
1224 EAST WARNER AVENUE  
P.O. BOX 2157

SANTA ANA CA 92707-0157

Date >> 3/25/2014

Customer PO No. BWC Lot No. Date Shipped  
PO162286 25607 3/25/2014  
Cust Item ID : M005.1540

BWC Item No.  
501540532041A01

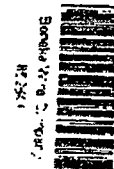
Description:  
.154" DIA + - .001" #4F 5056 - H32  
#4 FINISH, ALUMINUM COLD HEADING WIRE X 22"  
BLOCKWOUND 100# COILS.

Specifications:

CUST SPEC M-5 REV. T  
FED SPEC QQ-A-430 REV. C

Chemical Limits										Test Results																		
Alloy	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Others Each	Others Total	Aluminum Remainder	Case No.	lbs	Diameter (in)	Tensile (psi)	Yield (psi)	Peak Load (lbs)	EL %	Grain Size									
5056	.30	.40	.10	.05 - .20	4.5 - 5.6	.05 - .20	.10		.05	.15																		
852841	.06	.12	.01	.06	4.8	.08	.01	.01																				
													41450-1	398	0.1545	48,220.0			904.1									
													Total Weight:	398														

APR 16 2014



A74620

### Beneke Wire Company

WE CERTIFY THAT SAMPLES REPRESENTING THE MATERIAL COVERED IN THIS REPORT HAVE BEEN INSPECTED AND FOUND TO MEET THE COMPOSITION LIMITS AND MECHANICAL PROPERTIES SHOWN ABOVE. ANY WARRANTY IS LIMITED TO THAT SHOWN ON BENEKE WIRE COMPANY'S STANDARD TERMS AND CONDITIONS OF SALE.

5540 National Turnpike

Louisville, KY 40214

Authorized  
Signature

*Shannon King*

Shannon King, Plant Metallurgist

Phone: (502) 367-6434



# KAISER ALUMINUM FABRICATED PRODUCTS

*Best in Class*

## CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

Kaiser Aluminum Fabricated Products, LLC  
600 Kaiser Drive  
Heath, OH 43056-1088  
740-522-1151

CUSTOMER PO NUMBER:		CUSTOMER PART NUMBER:		PRODUCT DESCRIPTION:	
				ALY-JUMBO	
KAISER ORDER NUMBER:	LINE ITEM:	SHIP DATE:	ALLOY:	TEMPER:	
172559815	1	02/21/2014	K540		
WEIGHT SHIPPED:	QUANTITY:	BL NUMBER:	DIAM/DAF/THKNS:	WIDTH:	LENGTH:
19760 lbs.	92 pcs.	9203		0.000 in.	0.0 in.
SHIP TO:			SOLD TO:		
BENEKE WIRE COMPANY 5540 NATIONAL TURN PIKE LOUISVILLE, KY 40214			BENEKE WIRE COMPANY 5540 NATIONAL TURN PIKE LOUISVILLE, KY 40214		

Test Code: 4000

### Actual Physical Properties

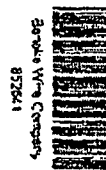
Lot No.

852641 0.0

### Chemical Composition, WT. % (Aluminum Remainder)

Lot		Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti
Cast/Drop									
ChemID									
852641									
63-1F2	Act.	0.06	0.12	0.01	0.06	4.8	0.08	0.01	0.01
187897									
Chemical	Min				0.05	4.5	0.05		
Limits	Max	0.30	0.40	0.10	0.20	4.9	0.20	0.10	0.05
	Others	Each	0.05	Max		Total	0.15	Max	

APR 16 2014



A74620



Plant Serial: 35096

Kaiser Order Number: 172559815

Line Item: 1



**KAISER  
ALUMINUM**  
FABRICATED PRODUCTS

*Best in Class*

**CERTIFIED TEST REPORT**

<http://Online.KaiserAluminum.com>

Kaiser Aluminum Fabricated Products, LLC  
600 Kaiser Drive  
Heath, OH 43056-1088  
740-522-1151

**Miscellaneous Notes**

Made in USA

Mercury is not a normal contaminant in aluminum alloys. Neither mercury nor any of its compounds were utilized by Kaiser Aluminum in the manufacture of this material. Actual (Act) chemical composition is from representative samples taken during the ingot casting process. Independent chemical analysis will vary from these values because of natural variation in the process and testing error. This test report shall not be reproduced, except in full, without the written approval of Kaiser Aluminum. The recording of false, fictitious, or fraudulent statements or entries on the certificate may be punished as a felony under federal law. Chemical analysis performed in accordance with ASTM E 1251-11. The Newark facility is AS9100C:2009 approved. The Newark Laboratory is NADCAP approved for chemical testing (OES).

The products you inquired and ordered are not governed by any applicable industry standard or custom specifications. They are produced, tested and released as such. By placing an order, you acknowledge and accept the full responsibility and liability for their fitness for the intended end use or end uses.

**CERTIFICATION**

Kaiser Aluminum Fabricated Products, LLP ("Kaiser") hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales order acknowledgement form. Any warranty is limited to that shown on Kaiser's standard general terms and conditions.

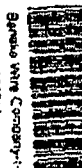
Steven J. Tua, Technical Manager

*Steven J. Tua*

APR 16 2014



Barcode  
45124



A74620



Plant Serial: 35096

Kaiser Order Number: 172559815

Line Item: 1





**WireTech, Inc.**

8440 E. Canning Street  
Los Angeles, CA 90040  
Phone (323) 722-4933  
Fax (323) 721-2738

SOLD TO

CHERRY AEROSPACE LLC  
1224 E. WARNER AVENUE  
SANTA ANA, CA 92705-5414  
USA

# CERTIFICATION

WORK ORDER  
102739

HEAT NO.  
10269481  
SALES ORDER / RLS  
852086 / 1  
ISO 9001-2000 REGISTERED



MECHANICAL TESTING  
CERT # 911.01

CERT# 911.01

CUSTOMER P.O.	CUSTOMER PART	QUANTITY	CARRIERS	LADING NO	SHIPMENT DATE
VP201301	M272.1145	2,164 Lbs	4	00106668	10/25/2013

SPECIFICATION C208740-101145A

A-8740, AQ, SKFG, CHQ WIRE, SEAM & DECARB FREE, SAIP Zinc Phosphate, Lime & Stearate Coating,  
Size:0.1135/0.1155 Specifications: AMS 2301K, AMS6322N, MIL-S-6049A, AMEND1, ASTM-A-547, AMS-S-6049-A,  
M 272.1145 REV. T

## CERTIFICATION REQUIREMENTS

### Chemical Properties

C	Si	Mn	P	S	Cu	Ni	Cr	Mo
.40	.26	.87	.009	.005	.08	.44	.54	.22

### Physical Properties

Grain Size	Jominy 1	Jominy 2	Jominy 3	Inclusions	Macro	Cleanliness	Mill Source
6 j5=55	J8=49	J10=46	S2-R1-C2	GOOD	F&S=0	Charter	

Country of Origin  
USA - DFAR Compliant

### Mechanical Properties

TEST	UNITS	Results
Tensile Strength	KSI	130.0
Yield Strength	KSI	110.5
% Elongation	%	7
% Reduction of Area	%	57.7
Rockwell Hardness C Scale	HRC	28
Decarb (Total)	In	0.00



MA 02 2013



Merchandise covered by this invoice is warranted to be free from defects in workmanship or material but not for any specific length of time, type or measure of service. No claim for allowance will be recognized unless presented in writing within 10 days after receipt of material. Our maximum liability for any claim predicated upon defective merchandise is limited to replacement of it, or to repayment of it, or to repayment of the purchase price thereof, as we elect. Material cut to specific length or size cannot be returned for credit and request for cancellation of such orders will not be considered if manufacture has been commenced. Buyer, by acceptance of the merchandise covered by this invoice, agrees to the foregoing terms and conditions and those set forth on the reverse hereof. "The recording of false, fictitious or fraudulent statements or entries on this document may be punished as a felony under Federal statutes including Federal law, Title 18, Chapter 47."

REPRODUCTION OF THIS CERTIFICATION IS NOT ALLOWED UNLESS IN FULL.

Wire Tech, Inc. metallurgical laboratory is accredited in the following test: chemical analysis per ASTM E 415, mechanical testing per ASTM A 370, Rockwell hardness per ASTM E 18, metallographic mount preparation per ASTM E 3, decarburization depth per ASTM E 1077, IRI 140, inclusion rating per ASTM E 45, decarburization performed as per IRI 140. The reported Chemical and Physical Properties are Mill Source results. Transcribed from mill certificates. HRC(HV) are hardness results performed with a 1/16" carbide ball. Unless otherwise specified, HRS and HRC results are conversions from ASTM A370 tables 1 and 2. \*Test result not covered by our current A2LA accreditation. Tests which have been undertaken by a subcontractor laboratory that is not accredited are not endorsed by A2LA or covered by Wire Tech, Inc. A2LA accreditation.

TEST RESULTS RELATE ONLY TO THE ITEMS TESTED.  
LATEST REVISIONS OF ASTM

DFAR Material per Clauses 252.225-7014 ALT. 1, 252.225-7009, & 225.003(9)

Material is free of mercury, radium, or alpha contamination.







# CHARTER STEEL

A Division of  
Charter Manufacturing Company, Inc.

EMAIL

1658 Cold Springs Road.  
Saukville, Wisconsin 53080

(262) 268-2400

1-800-437-8789

FAX (262) 268-2570

## CHARTER STEEL TEST REPORT

Reverse Has Text And Codes

Wiretech Incorporated  
6440 East Canning Street  
Los Angeles, CA-90040

Cust P.O.	7070-6
Customer Part #	8740C1A060-C
Charter Sales Order	70044420
Heat #	10269481
Ship Lot #	4223790
Grade	8740 R SK FG AQ 1/4
Process	HRSA
Finish Size	1/4

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed below and on the reverse side, and that it satisfies these requirements.

Lab Code: 7388

### Test Results of Heat Lot# 10269481

CHEM	C	MN	P	S	SI	NI	CR	MO	CU	SN	V
%Wt	.40	.87	.009	.005	.260	.44	.54	.22	.08	.006	.004

AL	N	B	TI	NB
.024	.0060	.0001	.002	.002

JOMINY(HRC)	JOM01	JOM02	JOM03	JOM04	JOM05	JOM06	JOM07	JOM08	JOM09	JOM10	JOM12
	56	56	56	56	55	52	50	49	47	46	43
	JOM14	JOM16	JOM18	JOM20	JOM24	JOM28	JOM32				
	41	38	37	36	34	32	31				

JOMINY SAMPLE TYPE ENGLISH = C  
MACRO ETCH SURFACE = 1 MACRO ETCH RANDOM = 1 MACRO ETCH CENTER = 1  
AMS 2301 FREQUENCY AVERAGE = .03 AMS 2301 FREQUENCY INDIVIDUAL = .20  
AMS 2301 SEVERITY AVERAGE = .06 AMS 2301 SEVERITY INDIVIDUAL = .34  
CHEM. DEVIATION EXT.-GREEN =



NOV 02 2013

REDUCTION RATIO = 516:1

### Test Results of Rolling Lot# 1104601

	# of Tests	Min Value	Max Value	Mean Value	
TENSILE (KSI)	2.0	83.5	83.7	83.6	TENSILE LAB = 0358-02
REDUCTION OF AREA (%)	2	66	69	67	RA LAB = 0358-02
ROCKWELL B (HRBW)	2	83	84	83	RB LAB = 0358-02

NUM DECARB = 8 FREE FERRITE DECARB (Inch) = .000 FREE FERR & PARTIAL DECARB (Inch) = .002  
CP SPHERO % LAB = 0358-02 NUM SPHERO = 2 SPHERODIZATION (%) = 86.3

### Specifications:

Manufactured per Charter Steel Quality Manual Rev. Date 09/12/12  
Meets customer specifications with any applicable Charter Steel exceptions for the following customer documents:  
Customer Document = AMS6322N/AMS2301K/COP3010M/BS2S147:1976 CHEM ONLY Revision = Dated =

### Additional Comments:



Charter Steel  
Saukville, WI, USA



Page 1 of 1

This MTR supersedes all previously dated MTRs for this order

Janice Barnard  
Manager of Quality Assurance  
09/05/2013

Rem: Load1, Fax0, Mail0



The following statements are applicable to the material described on the front of this Test Report:

1. Except as noted, the steel supplied for this order was melted, rolled, and processed in the United States meeting DFAR's compliance.
2. Mercury was not used during the manufacture of this product, nor was the steel contaminated with mercury during processing.
3. Unless directed by the customer, there are no welds in any of the coils produced for this order.
4. The laboratory that generated the analytical or test results can be identified by the following key:

Certificate Number	Lab Code	Laboratory		Address
0358-01	7388	CSSM	Charter Steel Melting Division	1653 Cold Springs Road, Saukville, WI 53080
0358-02	8171	CSSR/CSSP	Charter Steel Rolling/Processing Division	1658 Cold Springs Road, Saukville, WI 53080
0358-03	123633	CSFP	Charter Steel Ohio Processing Division	6255 US Highway 23, Risingsun, OH 43457
0358-04	125544	CSCM/CSCR	Charter Steel Cleveland	4300 E. 49th St., Cuyahoga Heights, OH 44125-1004
.	.	--	Subcontracted test performed by laboratory not in Charter Steel system	

5. When run by a Charter Steel laboratory, the following tests were performed according to the latest revisions of the specifications listed below, as noted in the Charter Steel Laboratory Quality Manual:

Test	Specification	CSSM	CSSR/CSSP	CSFP	CSCM/CSCR
Chemistry Analysis	ASTM E415; ASTM E1019	X			X
Macroetch	ASTM E381	X			X
Hardenability (Jominy)	ASTM A255; SAE J406; JIS G0561	X			X
Grain Size	ASTM E112	X	X	X	X
Tensile Test	ASTM E8; ASTM A370		X	X	X
Rockwell Hardness	ASTM E18; ASTM A370	X	X	X	X
Microstructure (spheroidization)	ASTM A892		X	X	
Inclusion Content (Methods A, E)	ASTM E45		X		X
Decarburization	ASTM E1077		X	X	X

Charter Steel has been accredited to perform all of the above tests by the American Association for Laboratory Accreditation (A2LA). These accreditations expire 01/31/15.

All other test results associated with a Charter Steel laboratory that appear on the front of this report, if any, were performed according to documented procedures developed by Charter Steel and are not accredited by A2LA.

6. The test results on the front of this report are the true values measured on the samples taken from the production lot. They do not apply to any other sample.
7. This test report cannot be reproduced or distributed except in full without the written permission of Charter Steel. The primary customer whose name and address appear on the front of this form may reproduce this test report subject to the following restrictions:
  - It may be distributed only to their customers
  - Both sides of all pages must be reproduced in full
8. This certification is given subject to the terms and conditions of sale provided in Charter Steel's acknowledgement (designated by our Sales Order number) to the customer's purchase order. Both order numbers appear on the front page of this Report.
9. Where the customer has provided a specification, the results on the front of this test report conform to that specification unless otherwise noted on this test report.



NOV 02 2013



A73879  
10206481



## Certificate of Conformance

Sold To: **CHERRY AEROSPACE**  
**SANTA ANA OPERATIONS**  
**1224 EAST WARNER AVE**  
**SANTA ANA, CA 92705-5414**

Date Shipped: 02/21/2014  
PO #: VP125694  
Radcliff No.: 131315  
Heat No.: QN369  
Qty. Shipped: 220 LBS-13-BLACK MIG  
SPOOLS

### Item Description

.0075 X .014 X .081 \*\*\* A286 Stainless Steel SPECIAL SHAPE AMS 5731 REV L, AMS  
5737 REV P CHEM  
ONLY

Melting Country: France

Producing Country: United States

Notes:  
PART# M189.05 REV W

MAR 19 2014



### Chemical Analysis

Al: 0.17%	B: 0.006%	Bi: 0.00002%	C: 0.04%
Co: 0.16%	Cr: 14.84%	Cu: 0.15%	Fe: BAL%
Mn: 1.74%	Mo: 1.25%	Ni: 24.57%	P: 0.015%
Pb: 0.0001%	S: 0.001%	Si: 0.06%	Ti: 2.13%
V: 0.31%			

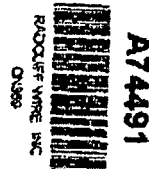
### Mechanical Properties

Tensile: 94 KSI

We certify that the chemical analysis, physical properties, and mechanical test results  
are correct as contained in our records, and that they conform to customer requirements.

Material as shipped, is free from mercury contamination.

Material is DFAR compliant



*Lisa Piatek*

**Lisa Piatek**  
Certification Clerk





PERTH, ON  
ERIN, ON  
DUMAS, AR  
LANCASTER, SC

813-267-3782 FAX 813-267-6817  
819-633-8632 FAX 518-833-2213  
870-382-2890 FAX 870-382-6888  
803-283-3383 FAX 803-283-6303



Drawing on Innovation  
Creating Wire Solutions

FOND DU LAC, WI  
UNION, IL  
PERRIS, CA

920-926-0809 FAX 920-926-0652  
816-923-2131 FAX 816-923-2128  
951-857-2105 FAX 951-843-6081

THE LEADING MANUFACTURER OF STAINLESS STEEL AND NICKEL ALLOY WIRE PRODUCTS  
EXECUTIVE OFFICES: PERTH, ON CANADA - EMAIL: [sales@centralwire.com](mailto:sales@centralwire.com)

CENTRAL WIRE  
8509 OLSON ROAD  
TEL: 816-923-2131

UNION, IL 60180-9730  
FAX: 816-923-2126

## CERTIFICATE OF CONFORMANCE

SOLD  
TO

RADCLIFF WIRE INC.  
P. O. BOX 603  
BRISTOL  
USA

CT 06011-0603

SHIP  
TO

RADCLIFF WIRE INC.  
97 RONZO ROAD  
BRISTOL,  
USA

CT 06011-0603

CUSTOMER'S PO NO.	TYPE OF CERT	CUSTOMER	ORDER NO.	WORK ORDER	DATE SHIPPED
46500	Customer	124610	1181607 1	4143742	11/01/13
SPECIFICATIONS:					

ITEM DESCRIPTION			SPEC. CLASS	HEAT
DESCRIPTION				
Forming A286SF	Melt mill			QN369
SKIN PASSED Bright	Aperam			
.0430 200LB.Plus	Country of origin		QTY SHIP	
Clean	France		246	044

CHEMICAL ANALYSIS						
C	MN	SI	P	S	CR	NI
.04	1.74	.06	.015	.001	14.84	24.57
MO	CU	CO	AL	TI	FE	B
1.25	.15	.16	.17	2.13	Balance	.006
V	BI	PB				
.31	< .00002	< .0001				

MECHANICAL PROPERTIES						
AS SHIPPED PROPERTIES:						
TENSILE 110.000 KSI MIN	TENSILE 113.000 KSI MAX			MAR 19 2014		
AFTER HEAT TREAT PROPERTIES:						

"PASSIVATED IN PROCESS PER AMS 2700C METHOD 1, TYPE 7"

The material as shipped is free from mercury contamination. I certify the chemical analysis and physical and mechanical test results reported above are correct as contained in the records of the company.

Very truly yours,

*[Signature]*

AUTHORIZED SIGNATURE

A74491  
RADCLIFF WIRE, INC.  
ON088





**operam**

**CERTIFICAT DE RECEPTION 3.1-EN 10204 n° C066257/2**

Inspection certificate - Abnahmeprüfzeugnis

Urine - Works - Werk  
Alloys Imphy  
58160 IMPHY FRANCE  
Téléphone: 03 86 21 30 00  
Télécopie: 03 86 21 31 00

Client  
Customer  
Kunde : CENTRAL W UNION  
  
V/Commande  
Your order  
Ihre Bestellung, Nr : 2010266  
  
Specification  
Specification  
Vorschrift : D.3.PRS.010.S REV.B 05/05/11  
  
du  
Of  
Von : 01.17.12

N°Reference  
Our reference  
Ihrer Auftrag Nr. : 310514/02

Produit  
Product  
Erzeugnisform : SY 286 WIRE ROD  
DIAM/7.5000/MM  
SS A286 : VAR (.295")

Etat de livraison  
Condition of delivery:  
Lieferzustand : SHAVED

N°de fabric.  
Manufact. Nr  
Fabr.-Nr. : 4100266296

Poids  
Weight  
Gewicht : 2771.180 LB  
N°d'org.  
Part. no  
Stückzahl : 4 PI

COMPOSITION CHIMIQUE  
CHEMICAL COMPOSITION  
CHEMISOE ZUSAMMENSETZUNG (S Gewicht)

Coulee n°  
Melt No  
Schmelze Nr : QN369/32

C	Mn	Si	S	P	Ni	Cr	Mo	Cu	Co
.04	1.74	.06	.001	.015	24.57	14.84	1.25	.15	.16
V	Al	Ti	Pb	Bi	B	Fe			
.31	.17	2.13	< .0001	< .00002	.006	bal.			

**CARACTERISTIQUES MECANQUES ET AUTRES ESSAIS / TESTS RESULTS**

**ETAT DE LIVRAISON**

CONDITION OF DELIVERY

RESISTANCE..... TENSILE STRENGTH..... : 607 MPA 83,034 psi  
GRAIN ASTM..... SIZE ASTM..... : 7.5 ASTM

**HYPERTREMPE 980°1H EAU+VIEILLISSEMENT 720°16H AIR**

HEAT TREATMENT OF SPECIMEN 1080°F1H WATER+1525°F 16H AIR

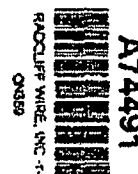
LIMITE ELASTIQUE..... YIELD STRENGTH 0.2%..... : 746 MPA  
RESISTANCE..... TENSILE STRENGTH..... : 1115 MPA  
ALLONGEMENT..... ELONGATION SUR 40..... : 28.0 %  
STRICITION..... RED. OF AREA..... : 52.0 %  
DURETE HB..... HARDNESS..... : 317 HB

**FLUAGE**

STRESS RUPTURE TEST AT 1200°F (649°C)

UNDER 70,000 PSI (482MPa)

DUREE DE VIE..... TIME..... : 138.4 H



QUALITY CONTROL DUPUIS G.

Signature  
Signature  
Unterschrift

07.05.12  
Imphy plant

Voir page suivante

PAGE N°: 1



Client : CENTRAL W UNION  
Customer :  
Ronde :  
V/Commande : 2010266  
Your order :  
Ihre Bestell. Nr. :  
Specification : D.3.PRS.010.S REV.B 05/05/11  
Specification :  
Vorschrift :

du : 01.17.12  
or :  
von :

N/Reference : 310514/02  
Our reference :  
Unter Auftrags Nr. :

ALLONGEMENT..... ELONGATION..... 26.0 %

ETAT HYPERTREMPE 900° + VIEILLISSEMENT 720°16H AIR  
HEAT TREATMENT OF TEST SPECIMEN 1650°F 1H WATER+1325°F16H AIR

LIMITE ELASTIQUE. YIELD STRENGTH 0.2% : 783 MPA  
RESISTANCE..... TENSILE STRENGTH..... : 1109 MPA  
ALLONGEMENT..... ELONGATION SUR 40..... : 28.0 %  
STRICTION..... RED. OF AREA..... : 51.0 %  
DURETE HB..... HARDNESS..... : 333 HB

FLUAGE

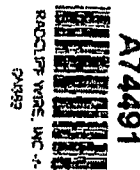
STRESS RUPTURE TEST AT 1200°F (649°C)

UNDER 65,000 PSI (4480MPa)

DUREE DE VIE..... TIME..... : 232.3 H  
ALLONGEMENT..... ELONGATION..... : 31.0 %

MELTING PROCESS: EF+VAR NO WELDING WITH FILLER METAL HAS BEEN  
PERFORMED STRESS RUPTURE AND AGE HARDENING AND CHEMISTRY  
TO MEET  
LATEST ISSUE OF AMS 5731L, AMS 5732J, 5734K AND 5737P  
ARCELORMITTAL SNA CERTIFIES THAT THIS MATERIAL HAS BEEN MELTED  
PRODUCED IN FRANCE, QUALIFYING COUNTRY, AS REQUIRED BY  
DFARS 252.225-7014  
MATERIAL IS FREE FROM MERCURY, RADIUM, OR ALPHA SOURCE  
CONTAMINATION  
THE WILLFUL RECORDING OF FALSE OR FRAUDULENT STATEMENTS ON  
THIS DOCUMENT MAY RESULT IN PUNISHMENT AS A FELONY UNDER  
FEDERAL STATUTES

MAR 19 2014







# UMPCO, INC.

**MANUFACTURE OF CLAMPS, CLIPS & BRACKETS**  
7100 LAMPSON AVENUE P.O. BOX 5158 GARDEN GROVE, CA 92846-5158 714-897-3531  
**WWW.UMPCO.COM**

Customer NO.

EAS002

Sales Order NO.

421172



\*\*\* THIS IS A BACKORDER \*\*\*

## SHIPPING DEST CODE

**SOLD TO** EAST COAST AVIATION  
ECAS LLC  
399 EAST DRIVE  
MELBOURNE, FL 32904

**SHIP TO** EAST COAST AVIATION  
ECAS LLC  
399 EAST DRIVE  
MELBOURNE, FL 32904

CLAIMS FOR ERRORS AND ALL DEDUCTIONS MUST BE MADE WITHIN 5 DAYS OF RECEIPT OF INVOICE 1 1/2% SVC. PER MO. CHARGED ON ALL PAST DUE AMOUNTS

ORDER DATE	SHIP VIA	F.O.B.	TERMS	SHIPPING DATE
03/01/16	FEDX FREIGHT	COLLECT	1/2 % 10 NET 30	
PURCHASE ORDER NUMBER	ORDER DATE	CONTACT	SALESPERSON	BILL OF LADING NUMBER
FL76100	03/01/16		08	

ITEM	ON ORDER	QUAN.	SHIPPED	QUAN.	BO	DESCRIPTION		
6	5000	5000				MS21919WDG8	04/26/16	Y
						REV E		
								1 - 400 5#
								2 - 2300 54#

Lot#: UMP111637 4Q15 Qty: 4600 IR Numbers: 186740 188217 188252 188088  
Lot#: UMP111637 4Q15 Qty: 400 IR Numbers: 186740 188217 188252 188088



7	5000	5000				MS21919WDG9	04/20/16	Y
						REV E		
								1 - 1200 19#
								2 - 1900 60#

Lot#: UMP109874 4Q15 Qty: 3800 IR Numbers: 186832 188094 188106 188011  
Lot#: UMP109874 4Q15 Qty: 1200 IR Numbers: 186832 188094 188106 188011



8	5000	5000				MS21919WDG5	04/26/16	Y
						REV E		
								1 - 1000 9#
								2 - 2000 36#

Lot#: UMP110614 3Q15 Qty: 4000 IR Numbers: 186740 187960 187985 187896  
Lot#: UMP110614 3Q15 Qty: 1000 IR Numbers: 186740 187960 187985 187896



EL

Page 2

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TOTAL CARTONS 38  
FEDX FREIGHT 415047517

TOTAL WEIGHT 894

1-PL

PURCHASE ORDER NUMBER



CUSTOMER NO.



SALES ORDER NO.



A WRITTEN RETURN MATERIAL AUTHORIZATION FORM (RMA) MUST BE OBTAINED FROM UMPCO BEFORE RETURNING ANY MATERIALS FOR CREDIT OR REPLACEMENT.  
\*WE HEREBY CERTIFY THAT THESE GOODS WERE PRODUCED IN COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS OF SECTION 6, 7 & 12 OF THE FAIR LABOR STANDARDS ACT, AS AMENDED, AND OF REGULATIONS AND ORDERS OF THE UNITED STATES DEPARTMENT OF LABOR ISSUED UNDER SECTION 14 THEREOF.  
UMPCO certifies that parts shipped on above documents conforms in all respects to applicable specifications and/or standards. Complete physical and chemical test reports as required are on file and available for review. Processing product testing and inspection control of raw material shall be in conformance with all applicable specifications, drawings and/or standards. Products are produced in a mercury free environment. \*When applicable, materials are compliant to DFARS 252.225-7009.

UMPCO, INC. 7100 Lampson Ave.  
Garden Grove, CA 92841

Customer Packing Slip

Authorized Signature Final Inspector

DELIVERY RECEIPT NO. 421172





# UMPCO, INC.

## MANUFACTURE OF CLAMPS, CLIPS & BRACKETS

7100 LAMPSON AVENUE P.O. BOX 5158 GARDEN GROVE, CA 92846-5158 714-897-3531

WWW.UMPCO.COM

Customer NO.

EAS002

Sales Order NO

421172



**SOLD TO**

EAST COAST AVIATION  
ECAS LLC  
399 EAST DRIVE  
MELBOURNE, FL 32904

**SHIPPING DEST CODE**

**SHIP TO**

EAST COAST AVIATION  
ECAS LLC  
399 EAST DRIVE  
MELBOURNE, FL 32904

CLAIMS FOR ERRORS AND ALL DEDUCTIONS MUST BE MADE WITHIN 5 DAYS OF RECEIPT OF INVOICE 1 1/2% SVC. PER MO. CHARGED ON ALL PAST DUE AMOUNT!

<b>ORDER DATE</b>	<b>SHIP VIA</b>	<b>F.O.B.</b>	<b>TERMS</b>	<b>SHIPPING DATE</b>
03/01/16	UPS	COLLECT	1/2 % 10 NET 30	

<b>PURCHASE ORDER NUMBER</b>	<b>ORDER DATE</b>	<b>CONTACT</b>	<b>SALESPERSON</b>	<b>BILL OF LADING NUMBER</b>
FL76100	03/01/16		08	

ITEM	ON ORDER	QUAN.	SHIPPED	QUAN. BO	DESCRIPTION		
1	5000	0			MS21919WDG17 REV E	04/26/16	Y
2	10000	0			MS21919WDG19 REV E	04/26/16	Y
3	2000	(2000)			MS21919WDG22 REV E	04/08/16 <b>ACCEPTED</b>	S/C Y
Lot#: UMP109749 2Q15 Qty: 2000 IR Numbers: 186473 187418 187444 187128							
4	500	(500)			MS21919WDG23 REV E	04/08/16	Y
Lot#: UMP109903A 3Q15 Qty: 500 IR Numbers: 186473 188072 188106 187130							
5	20000	0			MS21919WDG6 REV E	04/26/16	S/C Y
6	5000	0			MS21919WDG8 REV E	04/26/16	Y
7	5000	0			MS21919WDG9 REV E	04/26/16	Y

(Continued)

Page 1

Printed: 04/08/16

07:44:06

UPS 3165E0

**PURCHASE ORDER NUMBER**



**CUSTOMER NO.**



**SALES ORDER NO.**



A WRITTEN RETURN MATERIAL AUTHORIZATION FORM (RMA) MUST BE OBTAINED FROM UMPCO BEFORE RETURNING ANY MATERIALS FOR CREDIT OR REPLACEMENT. "WE HEREBY CERTIFY THAT THESE GOODS WERE PRODUCED IN COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS OF SECTION 6, 7 & 12 OF THE FAIR LABOR STANDARDS ACT, AS AMENDED, AND OF REGULATIONS AND ORDERS OF THE UNITED STATES DEPARTMENT OF LABOR ISSUED UNDER SECTION 14 THEREOF."

UMPCO, INC. 7100 Lampson Ave.  
Garden Grove, CA 92841

Customer Packing Slip

Authorized Signature Final Inspector

DELIVERY RECEIPT NO. 421172







# UMPCO, INC.

5/10/16  
JH

**MANUFACTURE OF CLAMPS, CLIPS & BRACKETS**  
7100 LAMPSON AVENUE P.O. BOX 5158 GARDEN GROVE, CA 92846-5158 714-897-3531  
WWW.UMPCO.COM

Customer NO.  
EAS002  
Sales Order NO.  
421172

\*\*\* THIS IS A BACKORDER \*\*\*



**SOLD TO** EAST COAST AVIATION  
ECAS LLC  
399 EAST DRIVE  
MELBOURNE, FL 32904

**SHIPPING DEST CODE**  
**SHIP TO** EAST COAST AVIATION  
ECAS LLC  
399 EAST DRIVE  
MELBOURNE, FL 32904

CLAIMS FOR ERRORS AND ALL DEDUCTIONS MUST BE MADE WITHIN 5 DAYS OF RECEIPT OF INVOICE 1 1/2% SVC. PER MO. CHARGED ON ALL PAST DUE AMOUNTS

ORDER DATE 03/01/16 SHIP VIA FEDX FREIGHT F.O.B. COLLECT TERMS 1/2 % 10 NET 30 SHIPPING DATE 04/27/16  
PURCHASE ORDER NUMBER FL76100 ORDER DATE 03/01/16 CONTACT SALESPERSON 08 BILL OF LADING NUMBER

ITEM	ON ORDER	QUAN.	SHIPPED	QUAN.	NO	DESCRIPTION			
1	5000	5000				MS21919WDG7 REV E	04/20/16	Y	1-200 6# 6-800 132#
						Lot# UMP111062 2Q15 Qty: 400 IR Numbers: 186832 188172 188204 187776			ACCEPTED
						Lot# UMP109788 2Q15 Qty: 400 IR Numbers: 186832 187926 187944 187404			ACCEPTED
						Lot# UMP109788 2Q15 Qty: 200 IR Numbers: 186832 187926 187944 187404			ACCEPTED
2	10000	10000				MS21919WDG19 REV E	04/26/16	Y	1-200 8# 14-700 378#
						Lot# UMP109424 3Q15 Qty: 1400 IR Numbers: 186473 187831 187848 187518			ACCEPTED
						Lot# UMP111938 3Q15 Qty: 1400 IR Numbers: 187630 188181 188244 187519			ACCEPTED
						Lot# UMP111938 3Q15 Qty: 200 IR Numbers: 187630 188181 188244 187519			ACCEPTED
5	20000	20000				MS21919WDG6 REV E	04/20/16	Y	1-2000 19# 6-3000 168#
						Lot# UMP111054B 4Q15 Qty: 1200 IR Numbers: 186740 187946 187985 187604			ACCEPTED
						Lot# UMP111054C 4Q15 Qty: 6000 IR Numbers: 186740 187946 187985 187773			ACCEPTED
						Lot# UMP111054C 4Q15 Qty: 2000 IR Numbers: 186740 187946 187985 187773			ACCEPTED

(Continued)

Page 1  
Printed: 04/27/16 06:51:16 FEDX FREIGHT 415047517

PURCHASE ORDER NUMBER

CUSTOMER NO.

SALES ORDER NO.



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UMPCO, INC. 7100 Lampson Ave.  
Garden Grove, CA 92841

Customer Packing Slip

Authorized Signature Final Inspector

DELIVERY RECEIPT NO. 421172





# UMPCO, INC.

**MANUFACTURE OF CLAMPS, CLIPS & BRACKETS**  
7100 LAMPSON AVENUE P.O. BOX 5158 GARDEN GROVE, CA 92846-5158 714-897-3531  
WWW.UMPCO.COM

Customer NO.

EAS002

Sales Order NO.

421172



\*\*\* THIS IS A BACKORDER \*\*\*

**SOLD TO** EAST COAST AVIATION  
ECAS LLC  
399 EAST DRIVE  
MELBOURNE, FL 32904

**SHIPPING DEST CODE**

**SHIP TO** EAST COAST AVIATION  
ECAS LLC  
399 EAST DRIVE  
MELBOURNE, FL 32904

CLAIMS FOR ERRORS AND ALL DEDUCTIONS MUST BE MADE WITHIN 5 DAYS OF RECEIPT OF INVOICE 1 1/2% SVC. PER MO. CHARGED ON ALL PAST DUE AMOUNTS

ORDER DATE 03/01/16 SHIP VIA FEDX FREIGHT F.O.B. COLLECT TERMS 1/2 % 10 NET 30 SHIPPING DATE  
PURCHASE ORDER NUMBER FL76100 ORDER DATE 03/01/16 CONTACT SALESPERSON 08 BILL OF LADING NUMBER

ITEM	ON ORDER	QUAN. SHIPPED	QUAN. BO	DESCRIPTION	DATE	Y	QTY	IR NUMBERS	REMARKS
6	5000	5000		MS21919WDG8	04/26/16	Y			
				REV E					
				Lot# UMP111637 4Q15			Qty: 4600	186740 188217 188252 188088	1-400 5#
				Lot# UMP111637 4Q15			Qty: 400	186740 188217 188252 188088	2-2300 54# ACCEPTED
7	5000	5000		MS21919WDG9	04/20/16	Y			
				REV E					
				Lot# UMP109874 4Q15			Qty: 3800	186832 188094 188106 188011	1-1200 19#
				Lot# UMP109874 4Q15			Qty: 1200	186832 188094 188106 188011	2-1900 60# ACCEPTED
8	5000	5000		MS21919WDG6	04/26/16	Y			
				REV E					
				Lot# UMP110614 3Q15			Qty: 4000	186740 187960 187985 187896	1-1000 9#
				Lot# UMP110614 3Q15			Qty: 1000	186740 187960 187985 187896	2-2000 36# ACCEPTED

EL

Page 2

Printed: 04/27/16 06:51:16

TOTAL CARTONS 38  
FEDX FREIGHT 415047517

TOTAL WEIGHT 894

PURCHASE ORDER NUMBER

CUSTOMER NO.

SALES ORDER NO.



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UMPCO, INC. 7100 Lampson Ave.  
Garden Grove, CA 92841

Customer Docking Slip

Authorized Signature Final Inspector

DELIVERY RECEIPT NO. 421172



Nº 80838

# CERTIFICATE OF COMPLIANCE TEST REPORT

FORM REV A 11/09

MADE IN THE U.S.A.

CUSTOMER NAME EAST COAST AVIATION SUPPL

PART NO. MS27039-0819\* REV 3

PURCHASE ORDER NO. 65200

INTERNAL ROUTING NO. 31531

QUANTITY TWENTY FIVE THOUSAND

MATERIAL/SPECIFICATION .176 A-8740 WIRETECH 10189930

DATE 7/29/2013

PARTS CONTAINED IN THIS SHIPMENT HAVE BEEN MANUFACTURED AND INSPECTED IN ACCORDANCE WITH APPLICABLE DRAWINGS AND SPECIFICATIONS.

## PHYSICAL PROPERTIES

TENSILE STRENGTH HARDNESS SCALE

- |                |    |
|----------------|----|
| 1) 2025.0 LB T | 1) |
| 2) 2000.0 LB T | 2) |
| 3) 1999.0 LB T | 3) |
| 4) 2021.0 LB T | 4) |
| 5) 2028.0 LB T | 5) |
| 6)             | 6) |
| 7)             | 7) |
| 8)             | 8) |

CONFORMS TO THE PROCUREMENT SPECIFICATIONS OF:

NASM 7839

DFARS 252.225-7009

OTHER MECHANICAL TEST DATA

- ☐ MEET MAGNETIC PERMEABILITY REQUIREMENTS OF FF-S-92B, MIL-I-17214B, AND ASTM A342/A 342M TEST METHOD 3.

PARTS ARE FREE FROM MERCURY AND ASBESTOS CONTAMINATION.

VISUAL AND DIMENSIONAL INSPECTION SATISFACTORY

FINISH

CAD TYPE 2 CLASS 2 PER AMS QQ-P-416 REV C

OTHER TESTING:

INSPECTED TO: ANSI/ASQ Z1.4 LEVEL 2

ADDITIONALLY, AN ANSI/ASQC Z 1.4 SAMPLE OF THE FINISHED FASTENERS WERE TESTED IN ACCORDANCE WITH APPLICABLE SPECIFICATIONS. SAMPLE PARTS AND THE TEST DATA ARE IN OUR RECORDS RETENTION AREA AS OBJECTIVE EVIDENCE AND WILL BE HELD AS REQUIRED.

Signature

TRACEY NIKSA, QC TECH

Cage Code #63020

CRESCENT MANUFACTURING OPERATING, CO.



700 George Washington Turnpike, Burlington, CT 06013, U.S.A.

Telephone: (860) 673-2591 Fax: (860) 673-5973





# County Heat Treat



Division of United County Industries Corporation

Website: [www.CountyHeatTreat.com](http://www.CountyHeatTreat.com)

32 Howe Avenue ~ P.O. Box 330 ~ Millbury, MA 01527

Phone: 508-865-5885

Fax: 508-865-4033

## *CERTIFICATE OF CONFORMANCE*

July 23, 2013

CRESCENT MANUFACTURING  
700 GEORGE WASHINGTON TNP  
P.O. BOX 1350  
BURLINGTON, CT 06013-1350

This is to certify the heat treating results on the material submitted as follows:

Purchase Order No.:	31531
CHT Work Order No.:	417456
Description:	207 LBS P/N: MS27039-0819* *8-32 X 1.219 PH PAN MRK
Material:	8740
Customer Specs:	HEAT TREAT PER SPEC AMS2759 REV. D HARDNESS: RC 26-31 (125-145,000 TENSILE)
Results:	HEAT TREATED PER SPEC AMS2759 REV. D HARDNESS: RC 28-29 TENSILE APPROVED BY CRESCENT

Inspected by:  Quality Control  
STEPHEN S. DERY

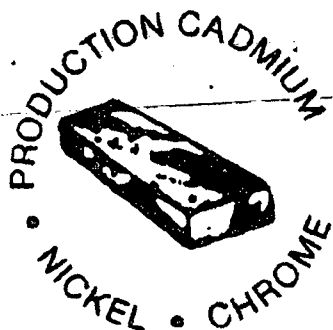
QMF 23

CRESCENT MFG  
T.R. NO. 80838

Effective Date: 4/7/11  
Issue: 3







# New Method Plating Co., Inc.

QUALITY  
MANAGEMENT  
SYSTEM  
ISO 9001:2000  
AS9100 REV. B  
CERTIFIED

Established 1931



43 Hammond St.  
Worcester, MA 01610  
Phone 508.754.2671  
Fax 508.754.1981  
www.newmethodplating.com

## CERTIFICATE OF COMPLIANCE

COMPANY CRESCENT MFG. CO.

DATE 7/24/13

PO#

31531

QUANTITY

30,000

JOB # 8-32 x 1.219 PH Pan MS27039-0819

CADMIUM PLATED IN ACCORDANCE WITH AMS QQ-P-416C

Class II Type II (Clear\_\_\_Yellow X Black\_\_\_)

Hardness: 26-31 HRC

☒ NO BAKE

☐ Before plating, bake at 375+/-25F for 4 hours. After plating, bake at 375+/-25F for 8 hours.

☐ Before plating, bake at 275+/-25F for 5 hours. After plating, bake at 275+/-25F for 23 hours.

☐ Before plating, bake at 375+/-25F for 4 hours. After plating, bake at 375+/-25F for 23 hours.

### Thickness Test Results

Accept ☒ Reject ☐ Min.: Spec. .0003 Read .00039 Avg. .00046

### Adhesion Test Results

Accept ☒ Reject ☐ Inspected by: 

### Certification

This lot has been processed, sampled, tested, and inspected in accordance with the contract and specification requirements listed above, and the plating and conversion coating complies with those contract and specification requirements. Process control data is on file and is available upon request. We certify that these parts have been processed in a mercury free environment.

Signed:   
Christopher J. Capalbo

Title: Quality Manager

Date: JUL 24 2013

CRESCENT MFG  
T.R. NO. 80838







**LFC** industriesA Division of RKR Technologies, LTD  
manufacturer of precision aerospace fasteners1221 Corporate Dr. W • P.O. Box 5982  
Arlington, Texas 76006 (817) 640-1322**SHIPPING  
REPORT**

51295B

PRODUCTION ORDER # *\$51583*  
COUNTRY OF ORIGIN: USAEAST COAST AVIATION  
744 PILOT ROAD  
LAS VEGAS, NV 89112**COMMENTS**RETURN OF ANY MERCHANDISE LISTED HEREON WILL NOT  
BE ACCEPTED WITHOUT PRIOR AUTHORIZATION**CERTIFICATE OF CONFORMANCE**

THE MATERIALS, PROCESSES AND PARTS FURNISHED WERE PRODUCED IN ACCORDANCE WITH APPLICABLE SPECIFICATION REQUIREMENTS, AND TEST REPORTS INDICATING CONFORMANCE ARE ON FILE SUBJECT TO EXAMINATION. OUR Q.C. INSPECTION SYSTEM CONFORMS TO ISO 9001

*Elmer J. Ward*  
SIGNEDPARTIAL ☐COMPLETE ☒QTY.  
SHIPPED:*33755*QY.  
CONTAINERS:*13*

LBS. PER "M":

*10,1423*GROS  
WEIGHT:*355.23*PCS. USED TO  
ESTABLISH WT.*20*TARE  
WEIGH*12.83*NET  
WEIGHT:*342.40*SHIPPING  
CLERK:*DC*

DATE

*7/31/12*CONSIGNEE  
SIGNATURE:

DATE

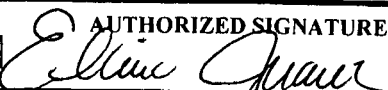
SHIPPING METHOD	<i>FedEx FBT</i>
PRE-PAID:	COLLECT <input checked="" type="checkbox"/>
ORDER NO.	60316
PART NO.	MS27039-1-16 ITEM # 7
REVISION	3
QTY. DUE	33755
SHIP TOL.	+0-5%
DATE DUE	07-23-2012

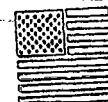
EECN: EAR99.SCHEDULE B #7318.15.2000



LFC INDUSTRIES, DIV. OF RKR TECHNOLOGIES LTD.  
1221 CORPORATE DR. W., ARLINGTON, TX 76006  
(817) 640-1322 FAX (817) 652-1566

LFC IND. CAGE CODE # 62384, CERTIFICATION - FASTENERS IN THIS LOT WERE  
MANUFACTURED, PROCESSED AND INSPECTED IN ONE RUN PER APPLICABLE  
DRAWING, PROCUREMENT SPECIFICATION, ISO9001:2008, AND AS9100B.

<b>PART #</b> MS27039-1-16		<b>REVISION</b> 3		<b>LOT #</b> S51583		<b>CUSTOMER</b> EAST COAST		<b>PO #</b> 60316																																					
<b>QUANTITY</b> 33755		<b>PROCUREMENT SPECIFICATION</b> NASM7839 REV-1		<b>HEAT TREAT SPECIFICATION</b> AMS-2759/1		<b>DESCRIPTION</b> SCREW, PAN HEAD																																							
<b>FINISH TYPE</b> TYII CL2		<b>FINISH SPECIFICATION</b> AMS-QQ-P-416C		<b>BAKE</b> N/A		<b>CROSS RECESS</b>																																							
<b>THREAD SIZE</b> 10-32 UNF3A		<b>THREAD SPECIFICATION</b> H28/2		<b>HARDNESS REQUIRED</b> RC 26-32		<b>HARDNESS ACTUAL AVERAGE</b> RC 30.5																																							
<b>NDT SAMPLE SIZE</b> N/A		<b>NDT SPECIFICATION</b> N/A		<b>NDT ACCEPT</b> N/A		<b>NDT REJECT</b> N/A		<b>LOCKING ELEMENT SPECIFICATION</b> N/A																																					
<b>MAGNETIC PERMEABILITY SAMPLE SIZE</b> N/A		<b>PERMEABILITY ACCEPT</b> N/A		<b>PERMEABILITY REJECT</b> N/A																																									
<b>RECESS TORQ SAMPLE SIZE</b> N/A		<b>MINIMUM TORQ REQUIRED</b> N/A		<b>TORQ END LOAD</b> N/A		<b>TORQ ACCEPT</b> N/A		<b>TORQ REJECT</b> N/A																																					
<b>CHEMICAL COMPOSITION ON CERTIFIED MILL TEST REPORT</b>																																													
<b>MILL HEAT #</b> 10157260		<b>MATERIAL SPECIFICATION</b> AMS6322N		<b>MATERIAL GRADE</b> 8740		<b>SUPPLIER</b> WIRETECH																																							
<b>C</b> .40	<b>Mn</b> .85	<b>P</b> .009	<b>S</b> .008	<b>Si</b> .28	<b>Ni</b> .45	<b>Cr</b> .55	<b>Mo</b> .22	<b>Cu</b> .08	<b>V</b> 																																				
<b>B</b> 	<b>Ti</b> 	<b>Al</b> 	<b>Co</b> 	<b>Pb</b> 	<b>Fe</b> 	<b>Sn</b> 	<b>Zn</b> 	<b>N</b> 	<b>Mg</b> 																																				
<b>TENSILE SAMPLE SIZE</b> 32					<b>TENSILE STRENGTH REQUIRED</b> 2500#					<b>DOUBLE SHEAR SAMPLE SIZE</b> 32					<b>D. SHEAR STRENGTH REQUIRED</b> 4250#																														
T1	3600	T12	3440	T23	3460	S1	5300	S12	5280	S23	5240																																		
T2	3440	T13	3460	T24	3560	S2	5220	S13	5260	S24	5220																																		
T3	3460	T14	3600	T25	3460	S3	5240	S14	5280	S25	5300																																		
T4	3440	T15	3440	T26	3440	S4	5280	S15	5240	S26	5240																																		
T5	3580	T16	3460	T27	3580	S5	5260	S16	5220	S27	5280																																		
T6	3440	T17	3580	T28	3460	S6	5280	S17	5240	S28	5280																																		
T7	3460	T18	3440	T29	3440	S7	5240	S18	5300	S29	5260																																		
T8	3560	T19	3460	T30	3460	S8	5220	S19	5240	S30	5240																																		
T9	3460	T20	3560	T31	3440	S9	5240	S20	5280	S31	5280																																		
T10	3440	T21	3460	T32	3460	S10	5230	S21	5220	S32	5300																																		
T11	3580	T22	3440			S11	5240	S22	5280																																				
<b>FATIGUE SAMPLE SIZE</b> N/A					<b>FATIGUE MAX LOAD</b>					<b>FATIGUE MIN LOAD</b>					<b>METALLURGICAL SAMPLE SIZE</b> 32																														
<b>F1 CYCLES</b>		<b>F1 LOCATION OF FAILURE</b>		<b>F2 CYCLES</b>		<b>F2 LOCATION OF FAILURE</b>		<b>F3 CYCLES</b>		<b>F3 LOCATION OF FAILURE</b>		<b>F4 CYCLES</b>		<b>F4 LOCATION OF FAILURE</b>		<b>F5 CYCLES</b>		<b>F5 LOCATION OF FAILURE</b>		<b>F6 CYCLES</b>		<b>F6 LOCATION OF FAILURE</b>		<b>F7 CYCLES</b>		<b>F7 LOCATION OF FAILURE</b>		<b>F8 CYCLES</b>		<b>F8 LOCATION OF FAILURE</b>		<b>MICRO STRUCTURE</b> ACCEPT		<b>MACRO STRUCTURE</b> ACCEPT		<b>DECARBURIZATION</b> NONE		<b>CARBURIZATION</b> NONE		<b>UNTEMPERED MARTENSITE</b> NONE		<b>GRAIN FLOW</b> ACCEPT		<b>DISCONTINUITIES</b> ACCEPT	
<b>FATIGUE ACCEPT</b> 0					<b>FATIGUE REJECT</b> 0					<b>DEVIATION/WAIVER NOTES</b>										<b>CERTIFICATION AMENDMENT NOTES</b>																									
<b>DATE</b> 7/31/2012		<b>SIGNATURE TITLE</b> DATA ENTRY SPECIALIST		<b>AUTHORIZED SIGNATURE</b> 																		<b>AMENDMENT DATE</b>																							









PAULO  
PRODUCTS  
COMPANY

HEAT TREATERS  
AND FINISHERS  
OF METAL

4827 CHELSEA AVENUE  
KANSAS CITY, MO 64130  
TEL: (816)861-7500  
FAX: (816)924-7300

## CERTIFIED INSPECTION REPORT

S O L F C INDUSTRIES  
L D 1221 CORPORATE DRIVE WEST  
P O BOX 5982  
T O ARLINGTON, TX 76006-5982

PAULO #: 1083524-06  
DATE: 03/09/2012  
DATE REC'D: 03/02/2012  
SHIP TO CODE:

PART DESC: CROSS SECTION 1882 X 1.179L  
PART NAME: SCREW PAN HEAD CROSS RECESS  
PART #: MS27039-1-16  
QUANTITY: 38500 PCS  
MATERIAL: 8740

CUSTOMER PO: S51583  
CUSTOMER DRAY:  
CUSTOMER JOB:  
LOT #:  
OTHER #:

Requirements:  
Process per SAE spec AMS 2759/1 rev E,  
Final core hardness 29-32 HRC

### INSPECTION RESULTS:

CORE HARDNESS  
Count: 13  
Range: 29 -31 HRC

Certified Furnace # 501 Cycle/Load # 50  
High heat temp: 1550±25° F Soak time: 60min  
Quench: Oil  
Temper furnace: 531 Temper temp/time: 1080±15° F/2hrs

\*Paulo is responsible for hardness testing only, customer responsible for all other testing. Paulo is not responsible for tensile testing\*

I CERTIFY THAT APPLICABLE MATERIAL PROCESSES HAVE BEEN PERFORMED IN ACCORDANCE WITH THE SPECIFICATION SHOWN ABOVE.  
I HAVE INSPECTED THE WORK AND THE SAMPLING AND RESULTS ARE AS INDICATED.

Approved By

Inspector Signature

CERTIFICATION  
REVIEWED  
ACCEPT  
LFC

4





**WireTech, Inc.**

6440 E. Canning Street  
Los Angeles, CA 90040  
Phone (323) 722-4933  
Fax (323) 721-2738

SOLD TO

**LFC Industries**  
1221 Corporate Drive West  
Arlington, TX 76011  
USA

# CERTIFICATION

WORK ORDER  
**088596**

HEAT NO.  
**10157260**  
SALES ORDER / RLS  
**842876 / 2**  
ISO 9001-2000 REGISTERED



MECHANICAL TESTING  
CERT # 911.01

CERT# 911.01

CUSTOMER P.O. <b>14631</b>	CUSTOMER PART	QUANTITY <b>10,739 Lbs</b>	CARRIERS <b>9</b>	LADING NO <b>00095164</b>	SHIPMENT DATE <b>02/09/2012</b>
<b>SPECIFICATION L158740-101875D</b> <b>A-8740, AQ, SKFG, CHQ WIRE, SEAM &amp; DECARB FREE, SAIP Zinc Phosphate, Lime &amp; Stearate Coating,</b> <b>Size:0.187/0.188 Specifications: AMS2301H, AMS6322N, MIL-S-6049,AMEND. 1, AMS-S-6049A</b>					
<b>CERTIFICATION REQUIREMENTS</b>					
<b>Chemical Properties</b>					
<b>C</b> .40	<b>Si</b> .28	<b>Mn</b> .85	<b>P</b> .009	<b>S</b> .008	<b>Cu</b> .08
					<b>Ni</b> .45
					<b>Cr</b> .55
					<b>Mo</b> .22
<b>Physical Properties</b>					
<b>Grain Size</b>	<b>Jominy 1</b>	<b>Jominy 2</b>	<b>Jominy 3</b>	<b>Inclusions Macro</b>	<b>Cleanliness Mill Source</b>
6	J5=55	J8=49	J10=46	S2-R1-C2	GOOD F&S=0 Charter
<b>Country of Origin</b>					
USA - DFAR Compliant					
<b>Mechanical Properties</b>					
<b>TEST</b>	<b>UNITS</b>	<b>CERTIFICATION</b>			<b>Results</b>
<b>Tensile Strength</b>	<b>KSI</b>	<b>REVIEWED</b> <b>ACCEPT</b> <b>LFC</b> <b>4</b>			<b>85.4</b>
<b>Decarb (Total)</b>	<b>In</b>				<b>0.00</b>
<b>Yield Strength</b>	<b>KSI</b>				<b>72.6</b>
<b>% Elongation</b>	<b>%</b>				<b>27</b>
<b>% Reduction of Area</b>	<b>%</b>				<b>69.9</b>
<b>Rockwell Hardness B Scale</b>	<b>HRB (s)</b>			<b>88</b>	

Merchandise covered by this invoice is warranted to be free from defects in workmanship or material but not for any specific length of time, type or measure of service. No claim for allowance will be recognized unless presented in writing within 10 days time after receipt of material. Our maximum liability for any claim predicated upon defective merchandise is limited to replacement of it, or to repayment of it, or to repayment of the purchase price thereof, as we elect. Material cut to specific length or size cannot be returned for credit and request for cancellation of such orders will not be considered if manufacture has been commenced. Buyer, by acceptance of the merchandise covered by this invoice, agrees to the foregoing terms and conditions and those set forth on the reverse hereof. "The recording of false, fictitious or fraudulent statements or entries on this document may be punished as a felony under Federal statutes including Federal law, Title 18, Chapter 47."

REPRODUCTION OF THIS CERTIFICATION IS NOT ALLOWED UNLESS IN FULL.

Wire Tech, Inc. metallurgical laboratory is accredited in the following test: chemical analysis per ASTM E 415, mechanical testing per ASTM A 370, Rockwell hardness per ASTM E 18, metallographic mount preparation per ASTM E 3, decarburization depth per ASTM E 1077, IFI 140, inclusion rating per ASTM E 45, decarburization performed as per IFI 140. The reported Chemical and Physical Properties are Melt Source results. Transcribed from mill certificates. HRB(W) are hardness results performed with a 1/16" carbide ball. Unless otherwise specified, HRB and HRC results are conversions from ASTM A370 tables 1 and 2. \*Test result not covered by our current A2LA accreditation. Tests which have been undertaken by a subcontractor laboratory that is not accredited are not endorsed by A2LA or covered by Wire Tech, Inc. A2LA accreditation.

TEST RESULTS RELATE ONLY TO THE ITEMS TESTED.

DFAR Material per Clauses 252.225-7014 ALT. 1, 252.225-7009, & 225.003(9)

"LATEST REVISIONS OF ASTM"

Material is free of mercury, radium, or alpha contamination.





# CHARTER STEEL

A Division of  
Charter Manufacturing Company, Inc.

EMAIL

1658 Cold Springs Road.  
Saukville, Wisconsin 53080

(262) 268-2400

1-800-437-8789

FAX (262) 268-2570

## CHARTER STEEL TEST REPORT

Reverse Has Text And Codes

Wiretech Incorporated  
6440 East Canning Street  
Attn: Andre Stephan  
Los Angeles, CA-90040

Cust P.O.	6676-11
Customer Part #	8740E1A070-C-WIRE
Charter Sales Order	70027876
Heat #	10157260
Ship Lot #	4112004
Grade	8740 R SK FG AQ 19/64
Process	DFSAR
Finish Size	0.2845

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed below and on the reverse side, and that it satisfies these requirements.

Lab Code: 7388

### Test Results of Heat Lot# 10157260

CHEM	C	MN	P	S	SI	NI	CR	MO	CU	SN	V
%Wt	.40	.85	.009	.008	.28	.45	.55	.22	.08	.006	.001

AL	N	B	TI	NB
.025	.0060	.0001	.002	.002

JOMINY(HRC)	JOM01	JOM02	JOM03	JOM04	JOM05	JOM06	JOM07	JOM08	JOM09	JOM10	JOM12
	56	56	56	56	55	52	50	49	47	46	43
	JOM14	JOM16	JOM18	JOM20	JOM24	JOM28	JOM32				
	41	38	37	36	34	32	31				

JOMINY SAMPLE TYPE ENGLISH = C  
MACRO ETCH SURFACE = 1 MACRO ETCH RANDOM = 1 MACRO ETCH CENTER = 1  
AMS 2301 FREQUENCY AVERAGE = .04 AMS 2301 FREQUENCY INDIVIDUAL = .07  
AMS 2301 SEVERITY AVERAGE = .13 AMS 2301 SEVERITY INDIVIDUAL = .53  
CHEM. DEVIATION EXT.-GREEN =

REDUCTION RATIO = 437:1

### Test Results of Rolling Lot# 1051425

	# of Tests	Min Value	Max Value	Mean Value	
TENSILE	3.0	93.8	95.8	94.8	TENSILE LAB = 0358-02
REDUCTION OF AREA	3	67	68	67	RA LAB = 0358-02

NUM DECARB = 2 FREE FERRITE DECARB = .000 FREE FERR & PARTIAL DECARB = .003  
CP SPHERO % LAB = 0358-02 NUM SPHERO = 2 SPHERODIZATION = 82.5

Specifications:

Manufactured per Charter Steel Quality Manual Rev 9,08-01-09

Meets customer specifications with any applicable Charter Steel exceptions for the following customer documents:

Customer Document = AMS6322N/AMS2301K/COP3010M/BS2S147:1976 CHEM ONLY

Revision = Dated =

Additional Comments:

Charter Steel  
Saukville, WI, USA



This MTR supersedes all previously dated MTRs for this order

*Janice Barnard*  
Janice Barnard

Manager of Quality Assurance  
01/11/2012

Rem: Load1,Fax0,Mail0



The following statements are applicable to the material described on the front of this Test Report:

1. Except as noted, the steel supplied for this order was melted, rolled, and processed in the United States meeting DFAR's compliance.
2. Mercury was not used during the manufacture of this product, nor was the steel contaminated with mercury during processing.
3. Unless directed by the customer, there are no welds in any of the coils produced for this order.
4. The laboratory that generated the analytical or test results can be identified by the following key:

Certificate Number	Lab Code	Laboratory		Address
0358-01	7388	CSSM	Charter Steel Melting Division	1653 Cold Springs Road, Saukville, WI 53080
0358-02	8171	CSSR/CSSP	Charter Steel Rolling/Processing Division	1658 Cold Springs Road, Saukville, WI 53080
0358-03	123633	CSFP	Charter Steel Ohio Processing Division	6255 US Highway 23, Risingsun, OH 43457
0358-04	125544	CSCM/CSCR	Charter Steel Cleveland	4300 E. 49th St., Cuyahoga Heights, OH 44125-1004
.	.	--	Subcontracted test performed by laboratory not in Charter Steel system	

5. When run by a Charter Steel laboratory, the following tests were performed according to the latest revisions of the specifications listed below, as noted in the Charter Steel Laboratory Quality Manual:

Test	Specification	CSSM	CSSR/CSSP	CSFP	CSCM/CSCR
Chemistry Analysis	ASTM E415; ASTM E1019	X			X
Macroetch	ASTM E381	X			X
Hardenability (Jominy)	ASTM A255; SAE J406; JIS G0561	X			X
Grain Size	ASTM E112	X	X	X	X
Tensile Test	ASTM E8; ASTM A370		X	X	X
Rockwell Hardness	ASTM E18; ASTM A370	X	X	X	X
Microstructure (spheroidization)	ASTM A892		X	X	
Inclusion Content (Methods A, E)	ASTM E45		X		X
Decarburization	ASTM E1077		X	X	X

Charter Steel has been accredited to perform all of the above tests by the American Association for Laboratory Accreditation (A2LA). These accreditations expire 01/31/13.

All other test results associated with a Charter Steel laboratory that appear on the front of this report, if any, were performed according to documented procedures developed by Charter Steel and are not accredited by A2LA.

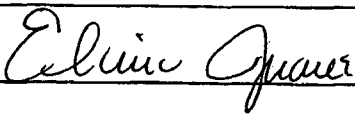
6. The test results on the front of this report are the true values measured on the samples taken from the production lot. They do not apply to any other sample.
7. This test report cannot be reproduced or distributed except in full without the written permission of Charter Steel. The primary customer whose name and address appear on the front of this form may reproduce this test report subject to the following restrictions:
  - It may be distributed only to their customers
  - Both sides of all pages must be reproduced in full
8. This certification is given subject to the terms and conditions of sale provided in Charter Steel's acknowledgement (designated by our Sales Order number) to the customer's purchase order. Both order numbers appear on the front page of this Report.
9. Where the customer has provided a specification, the results on the front of this test report conform to that specification unless otherwise noted on this test report.







## PLATING - PASSIVATION CERTIFICATION REPORT

<b>LOT #</b> S51583	<b>CUSTOMER</b> EAST COAST	<b>MILL HEAT #</b> 10157260
<b>PART #</b> MS27039-1-16	<b>PO #</b> 60316	<b>HARDNESS REQUIRED</b> RC 26-32
<b>QUANTITY</b> 33755	<b>FINISH TYPE</b> TYII CL2	<b>FINISH SPECIFICATION</b> AMS-QQ-P-416C
<b>TIME AND DATE OUT OF PLATE</b> N/A		
<b>TIME AND DATE IN OVEN</b> N/A		
<b>TIME AND DATE OUT OF OVEN</b> N/A		
<p>THE PARTS REFERENCED ABOVE WERE PROCESSED IN ACCORDANCE WITH ALL APPLICABLE REQUIREMENTS OF THE STATED FINISH SPECIFICATION. HYDROGEN EMBRITTLEMENT RELIEF, IF REQUIRED WAS PERFORMED AFTER PLATING AT 375 DEGREES (F), FOR A MINIMUM OF TWENTY THREE HOURS UNLESS OTHERWISE SPECIFIED. ACCEPTANCE TESTS RECORDS ARE ON FILE AT LFC INDUSTRIES AND ARE SUBJECT TO EXAMINATION UPON REQUEST.</p>		
<b>CERTIFICATION DATE</b> 7/31/2012		
<b>AUTHORIZED SIGNATURE:</b>		<b>SIGNATURE TITLE</b> DATA ENTRY SPECIALIST

